Writing Rules for Calibre
Student Workbook

Software Version 8.7_21

September 1999

Mentor Graphics®

℞ mgc_acro

Module 1
Foundational Concepts

Objectives

Objectives

When you complete this module, you will be able to:

♦ Explain the process of writing and executing a rule file in the Standard Verification Rule Format

♦ Follow general SVRF syntactic conventions

♦ Explain the purpose and usage of a DRC RuleCheck

♦ Explain the purpose and usage of a DRC constraint
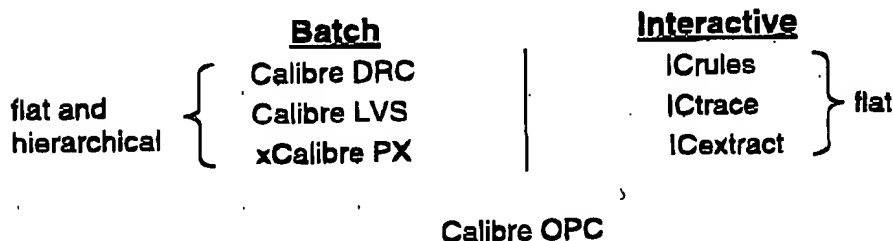
♦ Use string constants and variables in a rule file

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What is SVRF?

What is SVRF?

♦ **Standard Verification Rule Format**

♦ **Set of specification statements and operation statements from which you create a rule file to verify your design**

♦ **Drives all Mentor Graphics physical verification tools:**

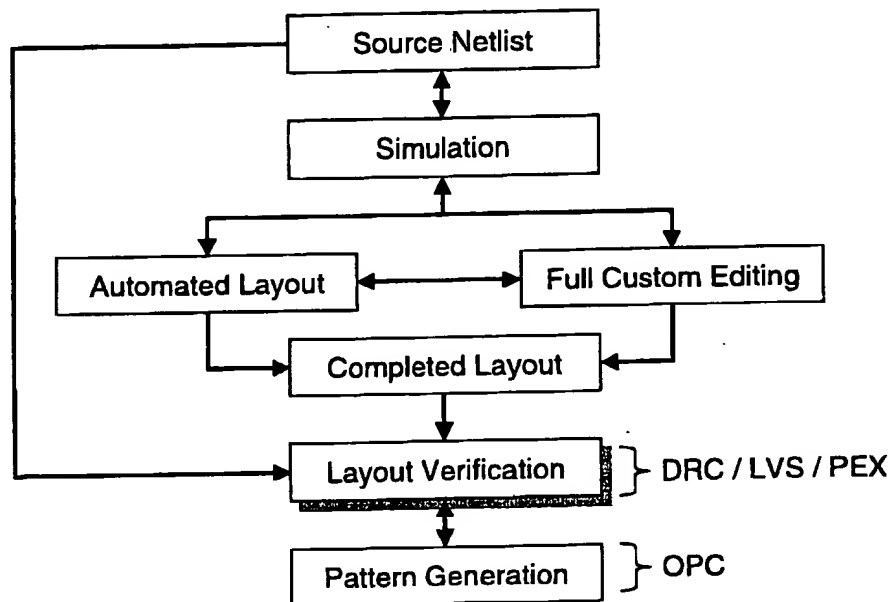|	**Batch**	**Interactive**	
flat and hierarchical	Calibre DRC Calibre LVS xCalibre PX	ICrules ICtrace ICextract	flat

Calibre OPC

References

For more information on this topic, refer to Chapter 1 of the *SVRF Manual* and Chapter 2 of the *Calibre Verification User's Manual.*

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Typical IC Design and Verification Flow

Typical IC Design and Verification Flow

```
                    ┌─────────────────┐
                    │  Source Netlist │◄──┐
                    └─────────────────┘   │
                           ▲▼             │
                    ┌─────────────────┐   │
                    │    Simulation   │   │
                    └─────────────────┘   │
                     │             │      │
          ┌──────────────────┐  ┌──────────────────────┐
          │ Automated Layout │◄─►│  Full Custom Editing │
          └──────────────────┘  └──────────────────────┘
                     │             │      │
                    ┌─────────────────┐   │
                    │ Completed Layout│◄──┘
                    └─────────────────┘
                           ▼
                    ┌─────────────────┐  } DRC / LVS / PEX
                    │Layout Verification│
                    └─────────────────┘
                           ▼
                    ┌─────────────────┐  } OPC
                    │Pattern Generation│
                    └─────────────────┘
```

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References

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Declaring a Rule File Variable

Declaring a Rule File Variable

◆ **Use the SVRF specification statement:**
`VARIABLE name value`

◆ **Instructs Calibre to replace `name`, when it appears in any operation or appropriate specification statement, with `value`**

◆ **Calibre can resolve a variable inside a RuleCheck comment if you precede the variable with a " ^ " character**

◆ **You may not redefine a variable**

◆ **If you nest variable definitions, then you must order the statements to avoid unresolved dependent variables**

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References

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Foundational Concepts

Example of Using a Rule File Variable

Example of Using a Rule File Variable

Before compilation	rule file

```
VARIABLE MSPACE 2   // declare variable

Rule_9 {

@ Metal spacing must be ^MSPACE microns.

EXTERNAL metal < MSPACE

}
```

After compilation	rule file

```
Rule_9 {

@ Metal spacing must be 2 microns.

EXTERNAL metal < 2

}
```

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References

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